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ABSTRACT

This report presents information about graduate education at eight state-funded institutions in Colorado: the University of Northern Colorado, the Colorado School of Mines, Colorado State University, the University of Southern Colorado, Adams State College, the University of Colorado (Boulder), the University of Colorado (Colorado Springs), and the University of Colorado (Denver). The report notes that: (1) graduate education is a small proportion of the educational effort at most of these institutions; (2) costs per student are lowest at institutions offering no doctoral degrees, with educational costs primarily driven by faculty time and compensation; (3) most in-state graduate students pay about 30 percent of costs, while nonresidents pay more than 100 percent; (4) cost differences between graduate and undergraduate courses exceed the difference in tuition rates; and (5) state support for these institutions covers about 70 percent of costs for undergraduate and graduate resident students. Tables and data provide detailed institutional profiles and cost and tuition revenue summaries. Appended are 20 additional tables presenting detailed data on costs and revenues, methodology, graduate degree programs, and graduate student financial support. (CH)

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ED 406 930

# COLORADO COMMISSION ON HIGHER EDUCATION

ACCESS TO HIGH-QUALITY, AFFORDABLE EDUCATION FOR ALL COLORADANS

## GRADUATE EDUCATION REPORT

OCTOBER 1996

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DWAYNE C. NUZUM, EXECUTIVE DIRECTOR

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# EXECUTIVE SUMMARY

On May 8, 1996, the Joint Budget Committee asked the Colorado Commission on Higher Education for "...a listing of all the graduate programs in the state, showing the fund source for each program, including tuition, General Fund, and other funds used to subsidize graduate education." This report, the Commission's response to that request, presents information about graduate education at eight state-funded institutions. Since the Joint Budget Committee also requested information regarding higher education health care programs, information for the University of Colorado Health Sciences Center and for the Colorado State University School of Professional Veterinary Medicine is contained in a separate report.

Highlights of this report include:

- Graduate education is a small proportion of the educational effort at most Colorado public higher education institutions offering graduate programs.

- Graduate education costs per student are lowest at institutions offering no doctoral degrees, and increase with the number and complexity of degree programs offered. Educational costs are primarily driven by faculty time and compensation.

- Most in-state graduate students pay about 30 percent of costs, while nonresident students pay more than 100 percent of costs.

- For in-state students, Colorado tuition and mandatory fee charges are close to the national average. Colorado's charges for nonresidents exceed the national average.

- State support for the institutions included in this report covers about 70 percent of costs for undergraduate and graduate resident students, and does not subsidize nonresident students at any level.

- State-funded financial aid for graduate students totals $2.1 million, or 4.6 percent of the state's financial aid appropriation.

During the time that this cost report was in preparation, the Colorado Commission for Achievement in Education (CCAE) was studying various aspects of Colorado graduate education. While this report does not attempt to duplicate the work of that Commission, it does refer to some of the material submitted to CCAE by Colorado institutions.

# OVERVIEW OF GRADUATE EDUCATION

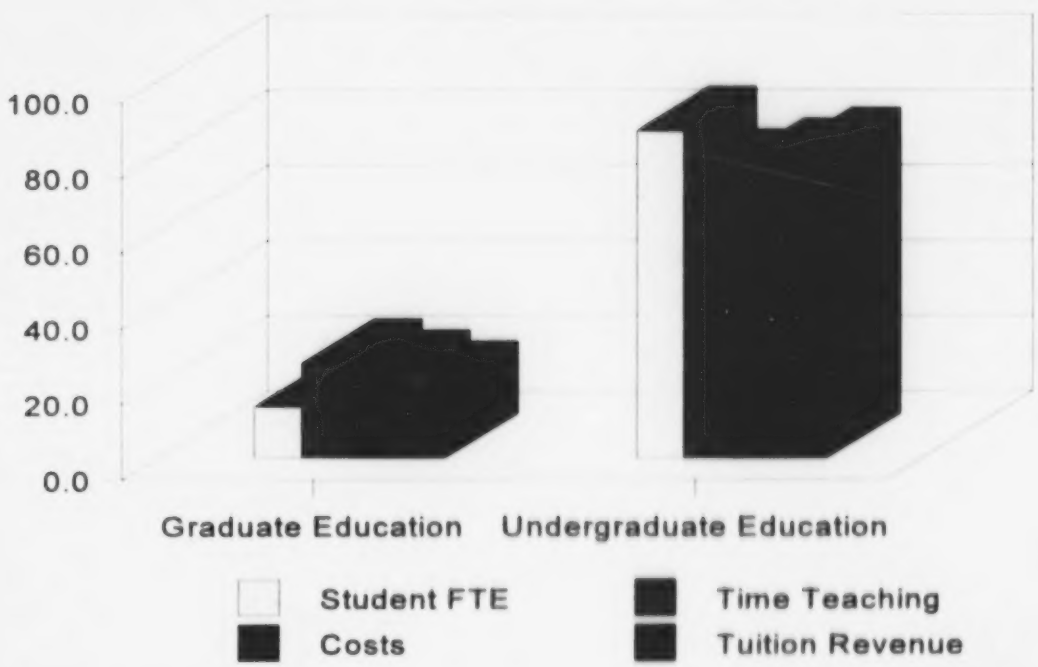
Graduate education in most of Colorado's public colleges and universities represents a relatively small proportion of the overall higher education enterprise. Excepting the Health Sciences Center, only eight of Colorado's 28 public colleges and universities offer graduate education. Graduate students comprise less than 14 percent of the student population of about 71,000 full-time equivalent students (SFTE) in these institutions. Yet, there is significant diversity and breadth in graduate education degree programs offered. Table 1 on page 5 profiles the eight institutions by types and numbers of graduate degree programs.

Costs of graduate education programs vary significantly. Appendix A contains tables displaying cost and tuition information for Colorado's institutions that provide graduate programs. Appendix B explains the methodology used to derive the cost and revenue information for the individual institutions and graduate fields of study. Appendix C shows graduate degrees granted by level and discipline over a number of years, as well as a complete list of graduate degree programs offered by Colorado's public higher education system. Appendix D contains information regarding financial support of graduate students. Several institutions prepared profiles of selected academic departments to illustrate the delivery of educational programs. These profiles were submitted to the Joint Budget Committee and are available at the Commission Office.

# COST AND TUITION REVENUE SUMMARY

Graph 1 below summarizes enrollment, instruction, cost and tuition information for the eight institutions examined in this report.

**Graph 1 Proportion of Students, Teaching Time, Costs, and Tuition Revenues for Eight Colorado Higher Education Institutions Offering Graduate Programs**



# PROFILES OF INSTITUTIONS OFFERING GRADUATE PROGRAMS

Eight of the public higher education institutions in Colorado that offer graduate programs are included in this report. The University of Colorado Health Sciences Center and the Colorado State University School of Professional Veterinary Medicine are covered in a separate report.

**Table 1**

| Institution | Degree Programs[1] | | | | | % Graduate SFTE | % Doctoral SFTE |
|---|---|---|---|---|---|---|---|
| | A | B | M | FP | D | | |
| University of Northern Colorado | | 39 | 43 | | 20 | 12.4% | 22.4% |
| Colorado School of Mines | | 15 | 23 | | 16 | 18.8% | 31.3% |
| Colorado State University | | 73 | 60 | | 39 | 10.2% | 25.8% |
| University of Southern Colorado | | 29 | 3 | | | 2.3% | 0.0% |
| Adams State College | 2 | 18 | 6 | | | 9.2% | 0.0% |
| University of Colorado - Boulder | | 59 | 47 | 1 | 39 | 12.2% | 35.7% |
| University of Colorado - Colorado Springs | | 21 | 14 | | 1[2] | 14.7% | 1.3% |
| University of Colorado - Denver | | 29 | 43 | | 3 | 31.9% | 4.3% |
| All Graduate Institutions | All Degrees - 643 | | | | | 13.4% | 21.1% |

[1] Key: A - Associate; B - Bachelor; M - Master; FP - First Professional; D - Doctoral

[2] Offered through University of Colorado - Boulder through a cooperative agreement.

## Costs

Fiscal year 1994-95 per graduate SFTE costs at the eight institutions included in this report averaged $12,353, compared with $6,811 for each undergraduate SFTE. Graduate education costs are lowest at the institutions offering masters degrees only; somewhat higher for doctoral institutions; and highest for the three research universities. Among the major fields of graduate study, costs were lowest for education programs and highest for arts and humanities, natural sciences, and engineering programs. For detail, see Tables A-1 and A-2 in Appendix A.

## Full-Time Tuition Rates

Graduate tuition rates vary significantly among the eight institutions. In-state graduate tuition ranges from $1,644 to $4,182 per year, while nonresident graduate tuition ranges from $5,774 to $13,536. At all but two institutions, graduate tuition rates are higher than undergraduate tuition rates. All of the institutions charge higher tuition rates to nonresidents than to in-state students. For detail, see Table A-3 in Appendix A. Table A-4 shows information for all 50 states which allows two conclusions. First, most states charge their graduate students more relative to their undergraduate students than Colorado does. Colorado tuition rates, however, (especially for nonresidents students) exceed those of most other states.

The average full-time in-state graduate tuition rate covered 33 percent of costs in FY 1994-95, while the average full-time nonresident graduate tuition rate covered 119 percent of costs. For undergraduates at these eight institutions, the in-state tuition rate covered 32 percent and the nonresident tuition rate covered 130 percent of costs. For detail, see Tables A-5 through A-8 in Appendix A.

## Tuition Revenue

Tuition rates for part-time graduate students vary by institution. While this report did not examine the relationship between part-time student tuition rates and costs, it did consider the impact of part-time students on overall FY 1994-95 tuition revenues.

Tuition revenues from in-state graduate students covered 30 percent of costs, while tuition revenues from nonresident graduate students covered 104 percent of costs. In-state undergraduate tuition revenue covered 33 percent of costs, while nonresident undergraduate tuition revenue covered 143 percent of costs. For detail, see Table A-9 in Appendix A.

# CONCLUSIONS

The information gathered for this report leads to the following conclusions:

- Graduate education, measured in a variety of ways, comprises a small proportion of the educational effort at most Colorado public higher education institutions offering graduate programs. As Graph 1 illustrates, graduate education accounts for only 13 percent of SFTE, 25 percent of faculty teaching time, 22 percent of cost, and 19 percent of tuition revenue.

- Graduate education costs are lowest at institutions offering no doctoral degrees, and they increase with the number and complexity of degree programs offered. Graduate education instructional costs are primarily driven by faculty time and compensation. The highest costs are found at the three research institutions, which offer the largest number and proportion of doctoral degrees.

- Most in-state graduate students pay about 30 percent of costs, while nonresident students pay more than 100 percent of costs. The Boulder and Denver campuses of the University of Colorado have established a number of special tuition rates for selected higher cost programs. The information generated for this report indicates that special tuition rates may be appropriate for additional fields of study at CU-Boulder and at other state institutions.

- The cost difference between graduate and undergraduate courses exceeds the difference in tuition rates charged.

- State support for the institutions included in this report covers about 70 percent of costs for undergraduate and graduate resident students, and does not subsidize nonresident students at any level. This result is consistent with expectations and state policy.

# APPENDIX A: COST AND REVENUE DATA

**Data Tables:**


Table A-1: FY 1994-95 Cost per Graduate SFTE

Table A-2: FY 1994-95 Cost per Undergraduate SFTE

Table A-3: FY 1994-95 Full-time Tuition Rates

Table A-4: FY 1994-95 Tuition and Required Fees at 4-Year Public Institutions by State

Table A-5: FY 1994-95 Full-time Tuition Rate as % of Costs - In-State Graduate Students

Table A-6: FY 1994-95 Full-time Tuition Rate as % of Costs - Nonresident Graduate Students

Table A-7: FY 1994-95 Full-time Tuition Rate as % of Costs - In-State Undergraduate Students

Table A-8: FY 1994-95 Full-time Tuition Rate as % of Costs - Nonresident Undergraduate Students

Table A-9: FY 1994-95 Tuition Revenue as % of Costs

## Cost per Graduate Student FTE

The costs shown in this table represent the total FY 1994-95 per SFTE costs in each institution of delivering ***graduate courses*** in the nine fields of study and overall.

Colorado bases the definition of SFTE for both graduate and undergraduate SFTE on 30 credit hours per year. Most graduate students, even those studying full-time and paying full-time tuition rates, take fewer than 30 credit hours per year.

Table A-1 also shows the proportion of SFTE at each institution that is pursuing a doctoral degree. Doctoral students, as a rule, require more faculty interaction than graduate students at the masters level, and than undergraduate students. This may explain why costs per student are highest at those institutions with the largest proportion of doctoral students.

Finally, Table A-1 indicates for each institution and overall the proportion of graduate SFTE that are classified as in-state students. Most graduate students coming from elsewhere can establish Colorado residency after one year.

## Table A-1

## FY 1994-95 Cost per Graduate SFTE (based on 30 credit hours per academic year)

| Field of Study | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD | Weighted Avg |
|---|---|---|---|---|---|---|---|---|---|
| Arts and Humanities | $10,172 | | $12,773 | | | $19,966 | | $11,528 | $15,419 |
| Natural Sciences | $15,890 | $11,600 | $10,488 | $13,795 | | $24,704 | $12,507 | $14,033 | $14,703 |
| Social Sciences | $8,009 | $11,455 | $10,936 | $7,357 | $6,217 | $23,688 | $9,067 | $11,727 | $13,401 |
| Engineering | | $12,591 | $11,543 | | | $19,364 | $12,303 | $11,093 | $14,449 |
| Law | | | | | | $11,728 | | | $11,728 |
| Business | | $12,098 | $8,906 | $8,091 | | $19,264 | $8,986 | $8,942 | $11,136 |
| Education | $8,517 | | $6,473 | $8,261 | $5,384 | $14,228 | $7,368 | $9,040 | $8,809 |
| Health Professions | $7,149 | | $11,426 | | | $15,169 | | $7,880 | $9,671 |
| Other | $8,469 | | $8,383 | | $4,107 | $20,917 | | $9,739 | $11,979 |
| **All Fields of Study** | **$8,815** | **$12,120** | **$10,123** | **$9,756** | **$5,917** | **$18,947** | **$9,305** | **$9,981** | **$12,353** |
| % Doctoral SFTE | 22.4% | 31.3% | 25.8% | 0.0% | 0.0% | 35.7% | 1.3% | 4.3% | 21.1% |
| % In-State SFTE | 83.6% | 56.2% | 66.4% | 77.6% | 85.5% | 73.4% | 92.7% | 87.5% | 77.0% |

## Cost per Undergraduate Student FTE

The costs shown in this table represent the total FY 1994-95 per SFTE costs in each institution of delivering ***undergraduate courses*** in the nine fields of study and overall.

For undergraduate students, the Colorado definition of SFTE as taking 30 credit hours per year is a more realistic measure than for graduate students. However, many undergraduate students studying full-time and paying full-time tuition rates take a slightly lower course load.

The information for undergraduate costs shows less variability between fields of study and between institutions than is the case for graduate costs.

Table A-2 indicates for each institution and overall the proportion of undergraduate SFTE that are classified as in-state students. Because of their younger age, it is more difficult for undergraduates not originally from Colorado to establish Colorado resident status.

## Table A-2

## FY 1994-95 Cost per Undergraduate SFTE (based on 30 credit hours per academic year)

| Field of Study | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD | Weighted Avg |
|---|---|---|---|---|---|---|---|---|---|
| Arts and Humanities | $6,143 | $9,353 | $6,541 | $5,709 | $5,356 | $8,388 | $5,762 | $7,831 | $7,088 |
| Natural Sciences | $5,499 | $8,770 | $6,301 | $4,823 | $5,671 | $7,193 | $5,442 | $6,928 | $6,519 |
| Social Sciences | $4,843 | $8,927 | $6,191 | $4,864 | $4,420 | $6,695 | $5,087 | $6,912 | $6,036 |
| Engineering | $6,019 | $10,100 | $9,692 | $8,012 | $5,180 | $8,848 | $7,188 | $8,517 | $9,039 |
| Business | $6,454 | $11,072 | $6,416 | $5,836 | $5,513 | $7,983 | $7,202 | $7,296 | $6,963 |
| Education | $6,010 | | $6,050 | $5,333 | $6,182 | $6,475 | $6,701 | | $6,076 |
| Health Professions | $5,863 | | $8,379 | $3,053 | | $8,153 | | | $6,735 |
| Other | $5,306 | $9,802 | $6,477 | $3,053 | $5,089 | $8,379 | $6,829 | $7,708 | $7,070 |
| **All Fields of Study** | **$5,640** | **$9,503** | **$6,650** | **$5,354** | **$5,257** | **$7,615** | **$5,876** | **$7,396** | **$6,811** |
| **% In-State SFTE** | 89.8% | 68.6% | 77.3% | 88.8% | 80.2% | 67.9% | 94.2% | 94.5% | 78.8% |

## Full-time Tuition Rates

The tuition rates in this table represent academic year full-time charges. The definition of "full-time" resides with each institutions. Also, each institution has established part-time tuition rates for students taking less than a full course load. At most institutions, the full-time definition and part-time tuition schedules are different for graduate students than for undergraduate students.

Two institution (UCB and UCD) have established differential tuition rates for both undergraduate and graduate students for selected programs. These are shown on the second page of this table.

Two institutions (CSM and USC) do not charge graduate students higher tuition rates than they charge undergraduate students.

## Table A-3
## FY 1994-95 Full-Time Tuition Rates

| STUDENT CATEGORY | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD |
|---|---|---|---|---|---|---|---|---|
| *General Rates* | | | | | | | | |
| | | | | *In-State Students* | | | | |
| **Undergraduates** | $1,829 | $4,182 | $2,124 | $1,644 | $1,386 | $2,216 | $2,026 | $1,828 |
| **Graduates** | $2,163 | $4,182 | $2,446 | $1,644 | $1,672 | $2,944 | $2,510 | $2,780 |
| | | | | *Nonresident Students* | | | | |
| **Undergraduates** | $7,731 | $12,390 | $8,412 | $7,100 | $4,816 | $12,780 | $7,734 | $9,244 |
| **Graduates** | $8,228 | $12,390 | $8,776 | $7,100 | $5,774 | $12,582 | $8,716 | $10,268 |

# FY 1994-95 Full-Time Tuition Rates
# (continued)

| STUDENT CATEGORY | UCB | UCD |
|---|---|---|
| | *In-State Students* | |
| **Undergraduates** | | |
| Business | $2,602 | $2,126 |
| Engineering | $2,672 | $2,126 |
| Journalism, Music | $2,264 | |
| Professional | | $1,828 |
| **Graduates** | | |
| Business | $3,338 | $3,486 |
| Business (MBA) | $3,490 | |
| Engineering | $3,392 | $3,276 |
| Law | $3,802 | |
| Professional | | $2,966 |
| Public Administration | | $3,276 |
| *Special Rates* | *Nonresident Students* | |
| **Undergraduates** | | |
| Business | $13,320 | $9,620 |
| Engineering | $13,374 | $9,620 |
| Journalism, Music | $12,924 | |
| Professional | | $9,244 |
| **Graduates** | | |
| Business | $12,780 | $11,134 |
| Business (MBA) | $13,014 | |
| Engineering | $12,834 | $10,930 |
| Law | $13,536 | |
| Professional | | $10,930 |
| Public Administration | | $10,930 |

## Tuition and Fees at Four-year Institutions

This information is taken from a National Center for Education Statistics (NCES) publication and shows tuition and required fees at four-year public institutions for each of the 50 states.

For in-state students, Colorado tuition and mandatory fee charges are close to the national average. For nonresidents, Colorado's charges exceed the national average.

The four right-hand columns are calculations made by CCHE staff based on the NCES data. These columns indicate the relationship between nonresident and in-state charges for both undergraduate and graduate students, and the relationship between graduate and undergraduate charges for both in-state and nonresident students.

All states charge their nonresident students more than in-state students, both at the undergraduate and graduate levels. A few states, however, charge their in-state graduate students less than their in-state undergraduates. Finally, a majority of states (26) charge their nonresident graduate students less than their nonresident undergraduate students.

# Table A-4

## Tuition and Required Fees at Four-Year Public Institutions[3]

| State | Tuition and Required Fees | | | | Comparison | | | |
|---|---|---|---|---|---|---|---|---|
| | *Undergraduate* | | *Graduate* | | *Undergraduate* | *Graduate* | *Resident* | *Non-Resident* |
| | In-State | Out-of-State | In-State | Out-of-State | Nonresident to Resident | Nonresident to Resident | Graduate to Undergraduate | Graduate to Undergraduate |
| Alabama | 2,027 | 3,880 | 1,999 | 3,845 | 191.42% | 192.35% | 98.62% | 99.10% |
| Alaska | 2,041 | 5,524 | 2,710 | 5,122 | 270.65% | 189.00% | 132.78% | 92.72% |
| Arizona | 1,894 | 7,312 | 1,894 | 7,274 | 386.06% | 384.05% | 100.00% | 99.48% |
| Arkansas | 1,884 | 3,992 | 2,368 | 4,658 | 211.89% | 196.71% | 125.69% | 116.68% |
| California | 2,607 | 10,031 | 2,578 | 9,577 | 384.77% | 371.49% | 98.89% | 95.47% |
| Colorado | **2,651** | **8,303** | **2,856** | **8,454** | **313.20%** | **296.01%** | **107.73%** | **101.82%** |
| Connecticut | 3,460 | 8,969 | 3,944 | 9,374 | 259.22% | 237.68% | 113.99% | 104.52% |
| Delaware | 3,116 | 7,931 | 3,452 | 7,917 | 254.53% | 229.35% | 110.78% | 99.82% |
| Florida | 1,756 | 6,621 | 2,969 | 8,353 | 377.05% | 281.34% | 169.08% | 126.16% |
| Georgia | 1,848 | 4,976 | 1,815 | 4,845 | 269.26% | 266.94% | 98.21% | 97.37% |
| Hawaii | 1,266 | 3,852 | 1,724 | 5,129 | 304.27% | 297.51% | 136.18% | 133.15% |
| Idaho | 1,544 | 5,462 | 2,046 | 6,034 | 353.76% | 294.92% | 132.51% | 110.47% |
| Illinois | 2,825 | 7,098 | 2,836 | 7,138 | 251.26% | 251.69% | 100.39% | 100.56% |
| Indiana | 2,637 | 6,988 | 2,669 | 6,502 | 265.00% | 243.61% | 101.21% | 93.05% |
| Iowa | 2,460 | 7,435 | 2,868 | 7,822 | 302.24% | 272.73% | 116.59% | 105.21% |
| Kansas | 1,955 | 6,216 | 2,359 | 6,158 | 317.95% | 261.04% | 120.66% | 99.07% |
| Kentucky | 1,976 | 5,436 | 2,151 | 5,961 | 275.10% | 277.13% | 108.86% | 109.66% |
| Louisiana | 2,218 | 4,719 | 2,154 | 4,477 | 212.76% | 207.85% | 97.11% | 94.87% |
| Maine | 3,182 | 7,404 | 4,866 | 8,124 | 232.68% | 166.95% | 152.92% | 109.72% |
| Maryland | 3,304 | 6,704 | 3,517 | 5,244 | 202.91% | 149.10% | 106.45% | 78.22% |
| Massachusetts | 3,502 | 7,949 | 3,877 | 6,718 | 226.98% | 173.28% | 110.71% | 84.51% |
| Michigan | 3,459 | 8,397 | 3,722 | 7,723 | 242.76% | 207.50% | 107.60% | 91.97% |
| Minnesota | 2,821 | 6,577 | 3,568 | 5,542 | 233.14% | 155.33% | 126.48% | 84.26% |
| Mississippi | 2,360 | 4,663 | 2,388 | 4,692 | 197.58% | 196.48% | 101.19% | 100.62% |
| Missouri | 2,622 | 5,844 | 3,042 | 7,117 | 222.88% | 233.96% | 116.02% | 121.78% |
| Montana | 2,077 | 5,872 | 1,906 | 4,754 | 282.72% | 249.42% | 91.77% | 80.96% |

## Tuition and Required Fees at Four-Year Public Institutions (continued)[3]

| State | Tuition and Required Fees | | | | Comparison | | | |
|---|---|---|---|---|---|---|---|---|
| | *Undergraduate* | | *Graduate* | | *Undergraduate* | *Graduate* | *Resident* | *Non-Resident* |
| | In-State | Out-of-State | In-State | Out-of-State | Nonresident to Resident | Nonresident to Resident | Graduate to Undergraduate | Graduate to Undergraduate |
| Nebraska | 1,928 | 3,986 | 1,967 | 4,084 | 206.74% | 207.63% | 102.02% | 102.46% |
| Nevada | 1,566 | 6,316 | 1,458 | 6,208 | 403.32% | 425.79% | 93.10% | 98.29% |
| New Hampshire | 3,499 | 8,617 | 3,786 | 6,840 | 246.27% | 180.67% | 108.20% | 79.38% |
| New Jersey | 3,675 | 5,806 | 5,050 | 6,891 | 157.99% | 136.46% | 137.41% | 118.69% |
| New Mexico | 1,690 | 6,001 | 1,743 | 5,921 | 355.09% | 339.70% | 103.14% | 98.67% |
| New York | 3,074 | 6,647 | 4,372 | 7,225 | 216.23% | 165.26% | 142.23% | 108.70% |
| North Carolina | 1,467 | 8,016 | 1,489 | 8,155 | 546.42% | 547.68% | 101.50% | 101.73% |
| North Dakota | 2,061 | 5,134 | 2,345 | 5,899 | 249.10% | 251.56% | 113.78% | 114.90% |
| Ohio | 3,139 | 7,428 | 4,298 | 8,962 | 236.64% | 208.52% | 136.92% | 120.65% |
| Oklahoma | 1,583 | 4,042 | 1,601 | 4,034 | 255.34% | 251.97% | 101.14% | 99.80% |
| Oregon | 3,137 | 8,301 | 4,736 | 7,544 | 264.62% | 159.29% | 150.97% | 90.88% |
| Pennsylvania | 4,540 | 8,420 | 4,430 | 7,871 | 185.46% | 177.67% | 97.58% | 93.48% |
| Rhode Island | 3,540 | 9,365 | 3,485 | 7,006 | 264.55% | 201.03% | 98.45% | 74.81% |
| South Carolina | 2,948 | 6,570 | 2,980 | 4,996 | 222.86% | 167.65% | 101.09% | 76.04% |
| South Dakota | 2,646 | 4,210 | 2,306 | 3,930 | 159.11% | 170.42% | 87.15% | 93.35% |
| Tennessee | 1,926 | 5,991 | 2,439 | 6,503 | 311.06% | 266.63% | 126.64% | 108.55% |
| Texas | 1,517 | 5,576 | 1,310 | 4,117 | 367.57% | 314.27% | 86.35% | 73.83% |
| Utah | 1,851 | 5,745 | 1,796 | 5,637 | 310.37% | 313.86% | 97.03% | 98.12% |
| Vermont | 4,691 | 9,961 | 4,103 | 9,145 | 212.34% | 222.89% | 87.47% | 91.81% |
| Virginia | 3,723 | 9,251 | 3,873 | 9,289 | 248.48% | 239.84% | 104.03% | 100.41% |
| Washington | 2,635 | 8,140 | 4,137 | 11,239 | 308.92% | 271.67% | 157.00% | 138.07% |
| West Virginia | 1,892 | 4,649 | 2,060 | 5,765 | 245.72% | 279.85% | 108.88% | 124.01% |
| Wisconsin | 2,365 | 7,368 | 3,007 | 9,054 | 311.54% | 301.10% | 127.15% | 122.88% |
| Wyoming | 1,908 | 5,988 | 2,316 | 6,384 | 313.84% | 275.65% | 121.38% | 106.61% |
| Average | $2,530 | $6,594 | $2,867 | $6,625 | 272.83% | 247.21% | 113.46% | 101.35% |



[3] Source: 1994-95 Basic Student Charges at Postsecondary Institutions, National Center for Education Statistics.

## Graduate Tuition as a Percentage of Cost

The information in these tables focuses on in-state and nonresident graduate students paying full-time tuition rates. The percentages shown indicate the proportion of costs attributable to full-time graduate students covered by the tuition rate provided in Table A-3.

Because graduate students paying full-time tuition take fewer than the 30 credit hours that the per SFTE costs in Table A-1 are based on, the calculations made for Tables A-5 and A-6 adjust those costs down to reflect actual credit loads of full-time graduate students. Footnote four shows the average full-time graduate student credit load by institution.

Where applicable, these calculations take differential tuition rates into account.

## Table A-5
## FY 1994-95 Full-time Tuition Rate as % of Costs - In-State Graduate Students

| Field of Study | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD | Simple Avg |
|---|---|---|---|---|---|---|---|---|---|
| Arts and Humanities | 29.0% | | 26.1% | | | 27.6% | | 30.1% | 28.2% |
| Natural Sciences | 18.6% | 45.1% | 31.8% | 14.9% | | 22.3% | 25.1% | 24.8% | 26.1% |
| Social Sciences | 36.8% | 45.6% | 30.5% | 27.9% | 33.6% | 23.3% | 34.6% | 29.6% | 32.8% |
| Engineering | | 41.5% | 28.9% | | | 32.8% | 25.5% | 37.5% | 33.3% |
| Law | | | | | | 32.4% | | | 32.4% |
| Business | | 43.2% | 37.5% | 25.4% | | 25.9% | 34.9% | 49.5% | 36.1% |
| Education | 34.6% | | 51.5% | | 38.8% | 38.8% | 42.6% | 38.4% | 40.8% |
| Health Professions | 41.3% | | 29.2% | | | 36.4% | | 44.1% | 37.7% |
| Other | 34.8% | | 39.8% | | 50.9% | 26.4% | | 35.7% | 37.5% |
| **All Fields of Study** | **33.5%** | **43.1%** | **32.9%** | **21.1%** | **35.3%** | **28.2%** | **33.7%** | **34.8%** | **32.8%** |
| % In-State SFTE | 83.6% | 56.2% | 66.4% | 77.6% | 85.5% | 73.4% | 92.7% | 87.5% | 77.0%[4] |

[4] Weighted average.

## Table A-6

## FY 1994-95 Full-time Tuition Rate as % of Costs - Nonresident Graduate Students[5]

| Field of Study | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD | Simple Avg |
|---|---|---|---|---|---|---|---|---|---|
| **Arts and Humanities** | 110.3% | | 93.7% | | | 118.2% | | 111.3% | 108.4% |
| **Natural Sciences** | 70.6% | 133.5% | 114.1% | 64.3% | | 95.5% | 87.1% | 91.5% | 93.8% |
| **Social Sciences** | 140.1% | 135.2% | 109.4% | 120.6% | 116.1% | 99.6% | 120.2% | 109.5% | 118.8% |
| **Engineering** | | 123.0% | 103.7% | | | 125.3% | 88.6% | 123.7% | 112.9% |
| **Law** | | | | | | 116.3% | | | 116.3% |
| **Business** | | 128.0% | 134.4% | 109.7% | | 97.3% | 121.2% | 156.4% | 124.5% |
| **Education** | 131.7% | | 184.9% | 107.4% | 134.1% | 165.8% | 147.9% | 142.0% | 144.8% |
| **Health Professions** | 157.0% | | 104.7% | | | 155.5% | | 162.9% | 145.0% |
| **Other** | 132.5% | | 142.8% | | 175.7% | 112.8% | | 131.8% | 139.1% |
| **All Fields of Study** | **127.3%** | **127.8%** | **118.2%** | **91.0%** | **122.0%** | **120.6%** | **117.1%** | **128.6%** | **119.1%** |
| **% Nonresident SFTE** | 16.4% | 43.8% | 33.6% | 22.4% | 14.5% | 26.6% | 7.3% | 12.5% | 23.0%[6] |

[5] Tables A-5 and A-6 are based on the following average credit hours per year taken by graduate students who pay full-time tuition rates: UNC-22, CSM-30, CSU-22, UCS-24, ASC-24, UCB-16, UCCS-24, UCD-24. UCB charges differential tuition and average credit hours as follows: Law-30, Business-21, Engineering-16.

[6] Weighted average.

## *Undergraduate Tuition as a Percentage of Costs*

These tables focus on in-state and nonresident undergraduate students paying full-time tuition rates. The percentages shown indicate the proportion of costs attributable to full-time undergraduate students covered by the tuition rate provided in Table A-3.

Undergraduate students paying full-time tuition take about 30 credit hours per year. For this reason, the calculation for these two tables did not adjust the cost information found in Table A-2 to derive the proportion of costs covered by tuition charges.

## Table A-7

## FY 1994-95 Full-time Tuition Rate as % of Costs - In-State Undergraduate Students

| Field of Study | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD | Simple Avg |
|---|---|---|---|---|---|---|---|---|---|
| Arts and Humanities | 29.8% | 44.7% | 32.5% | 28.8% | 25.9% | 26.4% | 35.2% | 23.3% | 30.8% |
| Natural Sciences | 33.3% | 47.7% | 33.7% | 34.1% | 24.4% | 30.8% | 37.2% | 26.4% | 33.4% |
| Social Sciences | 37.8% | 46.8% | 34.3% | 33.8% | 31.4% | 33.1% | 39.8% | 26.4% | 35.4% |
| Engineering | 30.4% | 41.4% | 21.9% | 20.5% | 26.8% | 31.4% | 28.2% | 25.6% | 28.3% |
| Law | | | | | | | | | |
| Business | 28.3% | 37.8% | 33.1% | 28.2% | 25.1% | 33.9% | 28.1% | 29.9% | 30.6% |
| Education | 30.4% | | 35.1% | 30.8% | 22.4% | 34.2% | 30.2% | | 30.5% |
| Health Professions | 31.2% | | 25.3% | | | 27.2% | | | 27.9% |
| Other | 34.5% | 42.7% | 32.8% | | 27.2% | 26.4% | 29.7% | 23.7% | 31.0% |
| All Fields of Study | 32.4% | 44.0% | 31.9% | 30.7% | 26.4% | 29.1% | 34.5% | 24.7% | 31.7% |
| % In-State SFTE | 89.8% | 68.6% | 77.3% | 88.8% | 80.2% | 67.9% | 94.2% | 94.5% | 78.8%[7] |



[7] Weighted average.

## Table A-8

## FY 1994-95 Full-time Tuition Rate as % of Costs - Nonresident Undergraduate Students

| Field of Study | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD | Simple Avg |
|---|---|---|---|---|---|---|---|---|---|
| Arts and Humanities | 125.9% | 132.5% | 128.6% | 124.4% | 89.9% | 152.4% | 134.2% | 118.0% | 125.7% |
| Natural Sciences | 140.6% | 141.3% | 133.5% | 147.2% | 84.9% | 177.7% | 142.1% | 133.4% | 137.6% |
| Social Sciences | 159.6% | 138.8% | 135.9% | 146.0% | 109.0% | 190.9% | 152.0% | 133.7% | 145.7% |
| Engineering | 128.4% | 122.7% | 86.8% | 88.6% | 93.0% | 152.4% | 107.6% | 113.6% | 111.6% |
| Law | | | | | | | | | |
| Business | 119.8% | 111.9% | 131.1% | 121.7% | 87.3% | 168.2% | 107.4% | 132.6% | 122.5% |
| Education | 128.6% | | 139.0% | 133.1% | 77.9% | 197.4% | 115.4% | | 131.9% |
| Health Professions | 131.9% | | 100.4% | | | 156.8% | | | 129.7% |
| Other | 145.7% | 126.4% | 129.9% | | 94.6% | 152.5% | 113.3% | 119.9% | 126.0% |
| All Fields of Study | 137.1% | 130.4% | 126.5% | 132.6% | 91.6% | 167.8% | 131.6% | 125.0% | 130.3% |
| % Nonresident SFTE | 10.2% | 31.4% | 22.7% | 11.2% | 19.8% | 32.1% | 5.8% | 5.5% | 21.2%[8] |

[8] Weighted average.

## Tuition Revenue as a Percentage of Costs

The calculation for this table is based on overall tuition revenue derived from the indicated subsets of each institution's student population. This revenue amount is then compared to the overall costs of providing undergraduate and graduate courses at each of the institutions. The revenue information is not available by field of study, so this comparison is provided by institution and by student subgroup.

The information shown here is another look at what portion of costs students cover with tuition payments. Looking at overall revenue by student group includes the many part-time students taking undergraduate and graduate courses. The tuition rate comparisons in Tables A-5 through A-8 focused only on full-time students.

The right-hand column indicates that tuition revenues from undergraduate and graduate in-state students cover about 30 percent of costs. For nonresidents, revenues exceed costs significantly for undergraduates, and exceed costs by four percent for graduate students.

At Adams State College, nonresident students are charged in-state tuition rates during the summer session.

## Table A-9
## FY 1994-95 Tuition Revenues as % of Costs

| Student Category | UNC | CSM | CSU | USC | ASC | UCB | UCCS | UCD | All Institutions |
|---|---|---|---|---|---|---|---|---|---|
| | *In-State Students* | | | | | | | | |
| **Undergraduates** | 33.8% | 39.3% | 33.0% | 32.3% | 26.8% | 32.8% | 40.0% | 24.7% | 32.7% |
| **Graduates** | 37.1% | 37.1% | 33.4% | 34.9% | 41.6% | 24.8% | 41.4% | 27.9% | 29.7% |
| | *Nonresident Students* | | | | | | | | |
| **Undergraduates** | 114.2% | 113.7% | 119.7% | 105.6% | 57.5% | 170.0% | 126.4% | 125.0% | 142.5% |
| **Graduates** | 156.6% | 109.0% | 111.7% | 116.0% | 56.5% | 92.1% | 131.7% | 102.9% | 104.1% |
| **All Students** | 44.7% | 64.0% | 53.7% | 41.0% | 34.0% | 68.0% | 45.6% | 33.0% | 55.0% |

# APPENDIX B: METHODOLOGY

This report uses FY 1994-95 information, the most recent year for which actual expenditures, revenues and student and faculty effort by field of study were available when the data were gathered.

The information contained in this report comes from the following sources:

- Institutional Budget Documents - Format 40 for student and faculty FTE by field of study; cost formats for instruction, academic support, student services, institutional support, public service, state-supported research, and operation and maintenance of plant; Format 30 for tuition rates; Format 100 for tuition revenues; Format 411 for indirect cost revenues, which were proportionately excluded from the cost calculations.

- Governing Boards - faculty compensation by field of study; selected academic profiles; average course load for graduate students paying full-time tuition rates; materials submitted to Colorado Commission for Achievement in Education.

- CCHE - resident versus nonresident student FTE for graduate and undergraduate students; historic tables of degrees granted; degrees awarded per 1,000 population; degree programs offered; faculty workload study for time teaching undergraduate and graduate students.

- U.S. Department of Education, Office of Educational Research and Improvement - grouping of disciplines into fields of study.

Colorado higher education institutions follow the NACUBO (National Association of College and University Business Officers) format for budgeting and accounting purposes. This format allocates costs by major activity, rather than by individual degree program or student level. While individual institutions allocate budgets to departments which offer degree programs, the Joint Budget Committee request for a comprehensive list of programs and costs within the indicated time frame mandated a simplified, common approach to gathering the needed information.

Here are the major assumptions made in preparing the cost information for this report:

- Disciplines in which degree programs are offered were grouped into nine major fields of study; this approach made costs comparable across institutions and made

calculations manageable within the broad scope and short time frame of the report. The fields of study are outlined in Table B-1.

- The cost of educating students is driven primarily by faculty time both for classroom teaching and one-on-one advising. Faculty time required to teach students at the various levels and in different disciplines varies significantly. The NACUBO Format 40, which is prepared annually and included in each institution's budget request document, contains student and faculty FTE and ratios by major discipline. This information, combined with faculty compensation levels by field of study, was used to differentiate the costs of direct instruction between institutions and fields of study.

- The Format 40 information is based on students taking and faculty teaching courses. This report assumes that, especially for graduate education, courses taken correspond closely with the student's degree program.

- Other costs related to instruction and institutional administration and campus upkeep were applied on a per student ratio by institution.

Finally, a key definition needs to be highlighted and explained. In Colorado, both graduate students and undergraduates are defined, for purposes of counting full-time equivalents (SFTE), as students taking 30 credit hours per academic year. This definition works well for students at the undergraduate level. But, for graduate students, the average full-time student is more likely to be taking 24 or fewer credit hours at the masters level, and 18 or fewer hours at the doctoral level. The cost information in this report (Tables A-1 and A-2 in Appendix A) is based on the SFTE definition. However, in relating graduate student full-time tuition to costs (Tables A-5 and A-6 in Appendix A), an adjustment was made to reflect the average number of credit hours taken by graduate students who are paying the full-time tuition rate.

## Table B-1
## Fields of Study Used for JBC Graduate Cost Report[9]

| Field of Study | Disciplines Included | |
|---|---|---|
| **Arts and Humanities** | Liberal Arts<br>Religion<br>Art<br>Visual and Performing Arts | Philosophy<br>English<br>Music |
| **Natural Sciences** | Mathematics<br>Physical Sciences | Life Sciences<br>Agricultural Science |
| **Social Sciences** | Psychology<br>History<br>Social Work<br>Other Social Sciences | Economics<br>Political Science<br>Public Administration |
| **Engineering** | Engineering<br>Computer Science | Architecture<br>Engineering Technology |
| **Law** | Law | Legal Assisting |
| **Business** | Accounting<br>Marketing<br>Communications<br>Other Business | Finance<br>Journalism<br>Agricultural Business |
| **Education** | Secondary Education<br>Other Education | Physical Education |
| **Health Professions[10]** | Medicine<br>Optometry<br>Nursing<br>Veterinary Science | Dentistry<br>Pharmacy<br>Chiropractic<br>Other Health Professions |
| **Other** | Home Economics<br>Library Science<br>Ethnic Studies | Foreign Languages<br>Parks/Recreation<br>Other Occupational |

[9] Source: Adapted from U.S. Department of Education, Office of Educational Research and Improvement.

[10] Programs offered at the University of Colorado Health Sciences Center and the Colorado State University School of Professional Veterinary Medicine are excluded from this report; they are included in a separate October 15, 1996 report to the Joint Budget Committee on health professions programs.

# APPENDIX C: GRADUATE DEGREE PROGRAMS

**Data Tables:**

Table C-1: Masters Degrees Conferred by Colorado Public Higher Education Institutions, FY 1985-86 to FY 1994-95

Table C-2: First Professional and Doctoral Degrees Conferred by Colorado Public Higher Education Institutions, FY 1985-86 to FY 1994-95

Table C-3: Degrees Conferred by Colorado Public Higher Education Institutions per 1,000 population by Degree Level, FY 1985-86 to FY 1994-95

Table C-4: List of Graduate Degrees Offered by Colorado Public Higher Education Institutions, FY 1995-96

## Table C-1
## Masters Degrees Conferred by Colorado Public Higher Education Institutions by Selected Levels and Discipline

| CIP Area | Field Title | FY 86 | FY 87 | FY 88 | FY 89 | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 | FY 95 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Agribusiness/Agriculture | 7 | 7 | 8 | 5 | 12 | 15 | 11 | 6 | 8 | 14 |
| 2 | Agricultural Sciences | 39 | 39 | 53 | 33 | 29 | 53 | 29 | 36 | 30 | 39 |
| 3 | Natural Resources | 37 | 28 | 37 | 32 | 36 | 23 | 43 | 47 | 36 | 44 |
| 4 | Architecture and Design | 100 | 106 | 132 | 97 | 99 | 110 | 94 | 115 | 131 | 116 |
| 9 | Communications | 50 | 50 | 38 | 48 | 65 | 72 | 54 | 72 | 81 | 88 |
| 11 | Computer and Information Science | 57 | 59 | 75 | 72 | 97 | 115 | 131 | 126 | 150 | 128 |
| 13 | Education | 910 | 976 | 1,014 | 1,294 | 1,240 | 1,059 | 1,109 | 1,088 | 1,157 | 1,065 |
| 14 | Engineering | 353 | 394 | 412 | 465 | 482 | 498 | 474 | 563 | 630 | 593 |
| 16 | Foreign Languages | 28 | 15 | 20 | 34 | 50 | 37 | 46 | 48 | 58 | 59 |
| 19 | Home Economics | 32 | 38 | 43 | 45 | 46 | 34 | 45 | 38 | 50 | 47 |
| 23 | Letters | 53 | 61 | 37 | 67 | 73 | 92 | 97 | 86 | 118 | 101 |
| 24 | Liberal/General Studies | 4 | 2 | 6 | 5 | 14 | 7 | 7 | 6 | 8 | 12 |
| 25 | Library Sciences | 6 | 20 | 15 | 12 | 10 | 10 | 10 | 12 | 7 | 19 |
| 26 | Life Sciences | 87 | 50 | 77 | 76 | 71 | 83 | 111 | 116 | 94 | 79 |
| 27 | Mathematics | 32 | 48 | 51 | 55 | 69 | 78 | 63 | 65 | 67 | 75 |
| 30 | Interdisciplinary Studies | 36 | 32 | 36 | 27 | 38 | 25 | 35 | 26 | 35 | 59 |
| 31 | Parks and Recreation | 46 | 36 | 34 | 27 | 32 | 39 | 48 | 36 | 46 | 38 |
| 38 | Philosophy and Religion | 6 | 13 | 16 | 13 | 8 | 6 | 11 | 28 | 22 | 21 |
| 40 | Physical Sciences | 143 | 102 | 135 | 115 | 120 | 114 | 117 | 125 | 132 | 127 |
| 42 | Psychology | 63 | 103 | 91 | 109 | 137 | 153 | 159 | 209 | 161 | 196 |
| 43 | Protective Services | 3 | 11 | 5 | 5 | 5 | 12 | 16 | 11 | 17 | 14 |
| 44 | Public Affairs | 56 | 94 | 94 | 87 | 80 | 106 | 134 | 105 | 106 | 128 |
| 45 | Social Sciences | 134 | 119 | 156 | 169 | 177 | 172 | 154 | 178 | 182 | 236 |
| 50 | Visual and Performing Arts | 83 | 78 | 60 | 88 | 78 | 80 | 81 | 85 | 101 | 118 |
| 51 | Health Sciences | 198 | 223 | 281 | 207 | 228 | 226 | 301 | 397 | 375 | 318 |
| 52 | Business and Management | 518 | 559 | 592 | 610 | 590 | 693 | 877 | 947 | 809 | 760 |
| | Summary | 3,081 | 3,263 | 3,518 | 3,797 | 3,886 | 3,912 | 4,257 | 4,571 | 4,611 | 4,494 |

## Table C-2

## Degrees Conferred by Colorado Public Higher Education Institutions by Selected Levels and Discipline

| CIP Area | Field Title | FY 86 | FY 87 | FY 88 | FY 89 | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 | FY 95 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *First Professional* | | | | | | | | | |
| 22 | Law | 151 | 143 | 160 | 146 | 136 | 145 | 151 | 166 | 151 | 160 |
| 51 | Health Sciences | 282 | 297 | 290 | 271 | 283 | 280 | 290 | 278 | 287 | 304 |
| | Summary | 433 | 440 | 450 | 417 | 419 | 425 | 441 | 444 | 438 | 464 |
| | | *Doctoral* | | | | | | | | | |
| 1 | Agribusiness/Agriculture | 3 | 1 | 2 | 3 | 4 | 4 | 1 | 4 | 5 | 4 |
| 2 | Agricultural Sciences | 21 | 11 | 19 | 17 | 20 | 14 | 20 | 14 | 14 | 22 |
| 3 | Natural Resources | 8 | 8 | 7 | 9 | 9 | 13 | 11 | 7 | 1 | 11 |
| 9 | Communications | 7 | 4 | 1 | 1 | 0 | 1 | 0 | 2 | 4 | 0 |
| 11 | Computer and Information Science | 4 | 7 | 2 | 2 | 8 | 10 | 15 | 16 | 20 | 17 |
| 13 | Education | 80 | 110 | 101 | 93 | 72 | 73 | 72 | 75 | 81 | 81 |
| 14 | Engineering | 63 | 85 | 84 | 95 | 105 | 120 | 95 | 161 | 139 | 146 |
| 16 | Foreign Languages | 2 | 8 | 5 | 3 | 10 | 4 | 5 | 9 | 6 | 6 |
| 19 | Home Economics | 1 | 2 | 4 | 4 | 3 | 2 | 6 | 5 | 1 | 3 |
| 23 | Letters | 4 | 4 | 5 | 5 | 5 | 8 | 7 | 8 | 11 | 10 |
| 26 | Life Sciences | 60 | 64 | 66 | 54 | 46 | 64 | 64 | 67 | 61 | 82 |
| 27 | Mathematics | 10 | 11 | 17 | 14 | 14 | 18 | 16 | 25 | 31 | 22 |
| 30 | Interdisciplinary Studies | 10 | 16 | 9 | 7 | 11 | 7 | 4 | 0 | 1 | 1 |
| 31 | Parks and Recreation | 1 | 2 | 4 | 4 | 0 | 2 | 0 | 2 | 1 | 6 |
| 38 | Philosophy and Religion | 2 | 3 | 3 | 4 | 3 | 0 | 1 | 2 | 3 | 7 |
| 40 | Physical Sciences | 81 | 79 | 103 | 93 | 121 | 112 | 107 | 111 | 121 | 91 |
| 42 | Psychology | 41 | 39 | 45 | 45 | 46 | 43 | 40 | 35 | 45 | 48 |
| 44 | Public Affairs | 7 | 4 | 6 | 16 | 11 | 6 | 7 | 9 | 7 | 9 |
| 45 | Social Sciences | 49 | 51 | 47 | 46 | 35 | 51 | 48 | 35 | 49 | 50 |
| 50 | Visual and Performing Arts | 24 | 16 | 16 | 24 | 30 | 17 | 25 | 25 | 20 | 25 |
| 51 | Health Sciences | 8 | 6 | 9 | 13 | 16 | 11 | 22 | 20 | 24 | 18 |
| 52 | Business and Management | 11 | 9 | 10 | 9 | 10 | 12 | 11 | 15 | 11 | 7 |
| | Summary | 497 | 540 | 565 | 561 | 579 | 592 | 577 | 647 | 656 | 666 |

## Table C-3
## Number of Degrees Per 1,000 Colorado Population

| FY | Level of Degree | | | | | | Estimated Population July 1 |
|---|---|---|---|---|---|---|---|
| | Certificate | Associate | Bachelors | Masters | 1st Prof. | Doctoral | |
| 86 | 0.327 | 0.983 | 4.000 | 0.944 | 0.133 | 0.152 | 3,262,789 |
| 87 | 0.389 | 1.137 | 3.935 | 0.992 | 0.134 | 0.164 | 3,290,580 |
| 88 | 0.484 | 1.142 | 3.947 | 1.067 | 0.136 | 0.171 | 3,297,565 |
| 89 | 0.561 | 1.173 | 4.011 | 1.146 | 0.126 | 0.169 | 3,314,296 |
| 90 | 0.662 | 1.169 | 4.266 | 1.174 | 0.127 | 0.175 | 3,311,023 |
| 91 | 0.653 | 1.221 | 4.211 | 1.161 | 0.126 | 0.176 | 3,369,794 |
| 92 | 0.718 | 1.266 | 4.292 | 1.229 | 0.127 | 0.167 | 3,464,715 |
| 93 | 0.725 | 1.287 | 4.452 | 1.282 | 0.125 | 0.181 | 3,566,006 |
| 94 | 0.726 | 1.363 | 4.320 | 1.262 | 0.120 | 0.180 | 3,653,617 |
| 95 | 0.744 | 1.378 | 4.343 | 1.208 | 0.125 | 0.179 | 3,720,551 |

## Table C-4

## FY 1995-96 List of Graduate Degree Programs

| Institution | Program Name | Degree Title |
|---|---|---|
| *University of Northern Colorado* | *Arts & Science* | |
| | Agency Counseling | MA |
| | Biological Education | PHD |
| | Biological Sciences | MA |
| | Chemical Education | PHD |
| | Chemistry | MA |
| | Communications | MA |
| | Counseling Psychology | PSYD |
| | Earth Sciences | MA |
| | Educational Mathematics | PHD |
| | English | MA |
| | Foreign Languages | MA |
| | Gerontology | MA |
| | Graduate Interdisciplinary Degree Program | MA/MS,EDS |
| | History | MA |
| | Mathematics | MA |
| | Music | MM, DA |
| | Psychology | MA |
| | Recreation | MA |
| | School Psychology | PHD |
| | Social Science | MA |
| | Visual Arts | MA |
| | *Education* | |
| | Applied Statistics & Research Methods | MS, PHD |
| | College Student Personnel Administration | PHD |
| | Counselor Education | EDD |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *University of Northern Colorado* | ***Education Continued*** | |
| | Educational Leadership | MA, EDS, EDD |
| | Educational Media | MA |
| | Educational Technology | MA, PHD |
| | Elementary Education | MA, EDD |
| | Elementary Education: Bilingual-Bicultural | MA |
| | Elementary Education: Early Childhood Education | MA, EDD |
| | Elementary School Counseling | MA |
| | Mathematics Education | MA |
| | Music Education | MME, DME |
| | Physical Education | MA, EDD |
| | Reading | MA, EDD |
| | School Psychology | EDS |
| | Science Education | MA |
| | Secondary/Postsecondary School Counseling | MA |
| | Special Education | MA, EDD |
| | Special Education: Mental Retardation | MA |
| | ***Health*** | |
| | Communication Disorders: Audiology | MA |
| | Communication Disorders: Speech Language Pathology | MA |
| | Human Rehabilitation | PHD |
| | Nursing | MS |
| | Public Health | MPH |
| | Rehabilitation Counseling | MA |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *Colorado School of Mines* | ***Arts & Science*** | |
| | Applied Chemistry | PHD |
| | Applied Physics | PHD |
| | Chemistry | MS |
| | Geochemistry | MS, PHD |
| | Geology | MS, PHD |
| | Geophysics | MS, PHD |
| | Mathematics & Computer Science | MS, PHD |
| | Mineral Economics | MS, PHD |
| | Physics | MS |
| | ***Engineering*** | |
| | Chemical & Petroleum Refining Engineer | ME |
| | Chemical & Petroleum Refining Engineering | MS, PHD |
| | Engineer of Mines | ME |
| | Engineering Systems | MS, ME, PHD |
| | Environmental Science & Engineering | MS, PHD |
| | Geological Engineer/Geology | ME |
| | Geological Engineering | MS, PHD |
| | Geophysical Engineer/Geophysics | ME |
| | Geophysical Engineering | MS, PHD |
| | Materials Science | MS, PHD |
| | Metallurgical & Materials Engineering | MS, ME, PHD |
| | Mine and Health Safety | MS |
| | Mining Engineering | MS, PHD |
| | Petroleum Engineer | ME |
| | Petroleum Engineering | MS, PHD |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *Colorado State University* | *Arts & Science* | |
| | Anatomy | MS, PHD |
| | Anthropology | MA |
| | Art | MFA |
| | Atmospheric Science | MS, PHD |
| | Biochemistry | MS, PHD |
| | Botany | MS, PHD |
| | Cell & Molecular Biology | MS, PHD |
| | Chemistry | MS, PHD |
| | Computer Science | MS, PHD |
| | Consumer & Family Studies | MHEC |
| | Creative Writing | MFA |
| | Design, Merchandising, & Consumer Sciences | MA/MS |
| | Earth Resources | PHD |
| | Ecology | MS, PHD |
| | Economics | MA, PHD |
| | English | MA, MA/MAT |
| | Entomology | MS, PHD |
| | Exercise & Sport Science | MS |
| | Food Science & Nutrition | MS, PHD |
| | Foreign Languages & Literatures | MA |
| | Geology | MS |
| | History | MA |
| | Human Development & Family Studies | MS |
| | Mathematics | MS/MAT, PHD |
| | Microbiology | MS, PHD |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *Colorado State University* | *Arts & Science Continued* | |
| | Music | MM |
| | Pathology | MS, PHD |
| | Philosophy | MA |
| | Physics | MS, PHD |
| | Physiology | MS, PHD |
| | Plant Pathology & Weed Science | MS, PHD |
| | Political Science | MA, PHD |
| | Psychology | MS, PHD |
| | Radiology & Radiation Biology | MS, PHD |
| | Recreation Resources | MS, PHD |
| | Social Work | MSW |
| | Sociology | MA, PHD |
| | Speech Communication | MA |
| | Statistics | MS, PHD |
| | Technical Communication | MS |
| | Watershed Sciences | MS |
| | Zoology | MS, PHD |
| | *Business* | |
| | Business Administration | MS/MBA |
| | *Education* | |
| | Industrial Sciences | MS |
| | Student Affairs in Higher Education | MS |
| | Vocational Education | MED, PHD |
| | *Engineering* | |
| | Agricultural Engineering | MS, PHD |
| | Chemical Engineering | MS, PHD |
| | Civil Engineering | MS, PHD |
| | Electrical Engineering | MS, PHD |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *Colorado State University* | *Engineering Continued* | |
| | Mechanical Engineering | MS, PHD |
| | *Health* | |
| | Clinical Sciences | MS, PHD |
| | Environmental Health | MS, PHD |
| | Occupational Therapy | MS |
| | Veterinary Medicine | DVM |
| | *Other* | |
| | Agricultural & Resource Economics | MS, PHD |
| | Agricultural Sciences | MAGR |
| | Agronomy | MS, PHD |
| | Animal Sciences | MS, PHD |
| | Fishery & Wildlife Biology | MS, PHD |
| | Forest Sciences | MS/MF, PHD |
| | Horticulture | MS, PHD |
| | Range Science | MS, PHD |
| *University of Southern Colorado* | *Arts & Science* | |
| | Applied Natural Science | MS |
| | *Business* | |
| | Business Administration | MBA |
| | *Engineering* | |
| | Systems Engineering | MSSE |
| *Adams State College* | *Arts & Science* | |
| | Art | MA |
| | Guidance & Counseling | MA |
| | *Education* | |
| | Elementary Education | MA |
| | Health, Physical Education & Recreation | MA |

# FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *Adams State College* | *Education Continued* | |
| | Secondary Education | MA |
| | Special Education: Moderate Needs I | MA |
| *University of Colorado-Boulder* | *Arts & Science* | |
| | Anthropology | MA, PHD |
| | Applied Mathematics | MS |
| | Astro-Physics Planetary & Atmospheric Sciences | MS, PHD |
| | Basic Science | MBS |
| | Chemical Physics | PHD |
| | Chemistry | MS, PHD |
| | Chinese | MA |
| | Classics | MA, PHD |
| | Communication | MA, PHD |
| | Comparative Literature | MA, PHD |
| | Computer Science | MS, PHD |
| | Dance | MFA |
| | Economics | MA, PHD |
| | English | MA, PHD |
| | Environmental Population Organis Biology | PHD |
| | Environmental, Population, Organis Biology | MA, PHD |
| | Fine Arts | MA/MFA |
| | French | MA, PHD |
| | Geography | MA, PHD |
| | Geology | MS, PHD |
| | Geophysics | PHD |
| | German | MA |
| | History | MA, PHD |
| | Journalism | MA |
| | Kinesiology | MS |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *University of Colorado-Boulder* | *Arts & Science Continued* | |
| | Linguistics | MA, PHD |
| | Mathematical Physics | PHD |
| | Mathematics | MA, PHD |
| | Molecular, Cellular & Developmental Biology | MA, PHD |
| | Music | MMUS, PHD |
| | Musical Arts | DMARTS |
| | Philosophy | MA, PHD |
| | Physics | MS, PHD |
| | Political Science | MA, PHD |
| | Psychology | MA, PHD |
| | Religious Studies | MA |
| | Sociology | MA, PHD |
| | Spanish | MA, PHD |
| | Theatre | MA, PHD |
| | *Business* | |
| | Business Administration | MS/MBA, PHD |
| | *Education* | |
| | Education: Social Multicultural & Bilingual Foundation | MA, PHD |
| | Education: Educational/Psychological Studies | MA, PHD |
| | Education: Instructional and Curriculum | MA, PHD |
| | Education: Research and Evaluation Methodology | PHD |
| | Music Education | MMED |
| | *Engineering* | |
| | Aerospace Engineering Sciences | MS, PHD |
| | Chemical Engineering | MS, PHD |
| | Civil Engineering | MS, PHD |
| | Electrical Engineering | MS |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *University of Colorado-Boulder* | ***Engineering Continued*** | |
| | Engineering | ME |
| | Mechanical Engineering | MS, PHD |
| | Telecommunications | MS |
| | ***Health*** | |
| | Communication Disorders & Speech Science | MA, PHD |
| | ***Law*** | |
| | Law | JD |
| *University of Colorado-Colorado Springs* | ***Arts & Science*** | |
| | Applied Mathematics | MS |
| | Basic Science | MBS |
| | Communication | MA |
| | Computer Science | MS |
| | History | MA |
| | Physics | MS |
| | Psychology | MA |
| | Public Administration | MPA |
| | Sociology | MA |
| | ***Business*** | |
| | Business Administration | MBA |
| | ***Education*** | |
| | Curriculum & Instruction | MA |
| | Guidance & Human Services | MA |
| | Special Education | MA |
| | ***Engineering*** | |
| | Electrical Engineering | MS |
| | Engineering | ME |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *University of Colorado-Denver* | *Arts & Science* | |
| | Anthropology | MA |
| | Applied Mathematics | MS |
| | Architecture | MARCH |
| | Basic Science | MBS |
| | Biology | MA |
| | Chemistry | MS |
| | Communication and Theatre | MA |
| | Computer Science | MS |
| | Economics | MA |
| | English | MA |
| | Health & Behavioral Science | PHD |
| | History | MA |
| | Humanities | MH |
| | Information & Learning Technologies | MA |
| | Information Systems | MS |
| | Interior Design | MID |
| | Landscape Architecture | MLA |
| | Political Science | MA |
| | Psychology | MA |
| | Public Administration | MPA, PHD |
| | Social Sciences | MSS |
| | Sociology | MA |
| | Technical Communications | MS |
| | Urban and Regional Planning | MURP |
| | Urban Design | MAUD |

## FY 1995-96 List of Graduate Degree Programs (cont.)

| Institution | Program Name | Degree Title |
|---|---|---|
| *University of Colorado-Denver* | ***Business*** | |
| | Acounting | MS |
| | Finance | MS |
| | International Business | MSIB |
| | Management and Organization | MS |
| | Marketing | MS |
| | ***Education*** | |
| | Administration, Supervision, Curriculum Development | MA, EDS |
| | Counseling Psychology, & Counselor Education | MA |
| | Curriculum and Instruction | MA |
| | Early Childhood Education | MA |
| | Educational Leadership & Innovation | PHD |
| | Educational Psychology | MA |
| | Special Education | MA |
| | ***Engineering*** | |
| | Civil Engineering | MS, PHD |
| | Electrical Engineering | MS |
| | Engineering | ME |
| | Mechanical Engineering | MS |
| | ***Health*** | |
| | Health Administration | MS |
| | ***Other*** | |
| | Criminal Justice | MCJ |
| | Environmental Sciences | MS |

# APPENDIX D: GRADUATE STUDENT FINANCIAL SUPPORT

Of the FY 1994-95 appropriation to the Colorado Commission on Higher Education for financial aid, a total of $2,154,918 was allocated for graduate student grants and fellowships. This allocation represents 4.6% of the appropriation.

A 1996 study by the Education Resources Institute, Inc., Higher Education Information Center, titled "Graduating into Debt: The Burdens of Borrowing for Graduate & Professional Students," reports on the increasing reliance of graduate and professional students on student loans as the cost of education rises faster than financial aid and other sources of support for graduate and professional students. The information for Colorado institutions in Appendix D indicates the extent to which these graduate students rely on loans.

Financing of graduate education was a topic at the August 7, 1996 meeting of the Colorado Commission for Achievement in Education. Shown here are summaries of what the institutions submitted in response to the Commission's question regarding financing of graduate education.

## University of Northern Colorado

| Award Type | Source(s)[11] | | | | | | # of Awards | Amount (FY 1994-95) |
|---|---|---|---|---|---|---|---|---|
| | A | E | F | I | P | S | | |
| Loan | | ✓ | | ✓ | | | 1,419 | $4,781,435 |
| Employment[12] | ✓ | | ✓ | ✓ | | | 631 | $1,642,406 |
| Tuition Assistance | ✓ | | | | ✓ | ✓ | 364 | $971,882 |
| Scholarship | ✓ | ✓ | | | ✓ | ✓ | 467 | $811,989 |
| Stipend | ✓ | | | | ✓ | | 144 | $242,050 |
| Grant | | | | | | ✓ | 145 | $110,687 |

## Colorado School of Mines

| Award Type | # of Awards | Amount (FY 1995-96) |
|---|---|---|
| Graduate Fellowships | 62 | $345,588 |
| Research Assistantships | 239 | $2,443,563 |
| Teaching Assistantships | 141 | $1,293,509 |
| Graduate Assistantships | 88 | $137,188 |
| Loans | 138 | $1,526,287 |

[11] Key: A - Auxiliary/Self-Funded; E - External; F - Federal; I - Institution; P - Sponsored; S - State

[12] Teaching and Graduate Assistants, Work Study, Hourly

## Colorado State University

| Type of Award | Sources[13] | | | # of Awards | Amount (FY1995-96) |
|---|---|---|---|---|---|
| | F | S | U | | |
| Student Loans | ✓ | | | 2,750 | $8,019,885 |
| Graduate Teaching Assistantships | ✓ | ✓ | ✓ | 680 | $5,714,469 |
| Graduate Research Assistantships | ✓ | ✓ | ✓ | 520 | $6,648,309 |
| Other Graduate Assistantships | ✓ | ✓ | ✓ | 117 | $734,297 |
| Hourly Employment | ✓ | ✓ | ✓ | 1,237 | $5,240,928 |
| Tuition Assistance | ✓ | ✓ | ✓ | N/A | $5,683,624 |
| Colorado Competitive Fellowships | | ✓ | | 75 | $257,448 |
| Stipends | ✓ | ✓ | ✓ | N/A | $1,192,752 |
| Grants | | ✓ | | 94 | $57,638 |

[13] Key: F - Federal; S - State; U - University

## Summary or Graduate Student Financial Support at University of Colorado at Denver

| School/College | Types of Awards and Amounts |
|---|---|
| University Total | All, $1.47 million |
| Architecture and Planning | $49,448 Graduate Teaching Awards (scholarships) for 64 of 343 students. Privately funded scholarships also available.<br>10 paid teaching assistants |
| Business Administration | No teaching assistants.<br>About 5.5% of students receive research assistantships.<br>6% receive mostly privately funded scholarships.<br>Some students receive tuition subsidies from their employers.<br>$169,312 institutional support total. |
| Engineering and Applied Science | $35,000 tuition assistance funds total.<br>20% of masters students receive some financial support.<br>80% of Ph.D. students receive some financial support. |
| Liberal Arts and Sciences | $170,900 tuition awards<br>238 teaching assistants |
| Public Affairs | $16,166 tuition awards<br>$12,793 graduate assistantship awards<br>Some privately funded scholarships<br>10% of MPA students and 22% of doctoral students receive some financial support |
| Education | $559,441 total available<br>7% of masters students and 2% of doctoral students receive some financial support<br>18-20 students per year are supported through graduate assistantships offering hourly salary for 10-21 hours of work per week, plus 6 credit hours of tuition paid for each semester.<br>106 students are supported through federal training grants.<br>Private scholarships are also available.<br>Some students are offered reduced tuition. |

## University of Colorado at Boulder

| Type of Award | Source(s)[14] | | | | | Amount (1995-96) |
|---|---|---|---|---|---|---|
| | F | O | R | S | U | |
| Fellowships | ✓ | | ✓ | ✓ | ✓ | $5,300,000 |
| Loans | ✓ | | | | | $21,100,000 |
| Teaching Assistantships | | | | | ✓ | $10,000,000 |
| Research Assistantships | ✓ | ✓ | | | | $8,500,000 |
| Tuition Remission[15] | | | | | ✓ | $5,400,000 |

## University of Colorado at Boulder

| Student Level/Program | % Receiving Non-Loan Financial Aid | % Receiving Either Non-Loan or Loan Financial Aid |
|---|---|---|
| | *Masters Degree* | |
| Business | 24% | 53% |
| Law | 55% | 86% |
| Other | 29% | 54% |
| Masters Degree Total | 33% | 59% |
| Doctoral Degree Total | 43% | 55% |

[14] Key: F - Federal; O - Other Grant Funds; R - Private Funds; S - State; U - University

[15] For teaching assistants and fellowship recipients.